10 FINANCIAL ANALYSIS AND IMPLEMENTATION PLAN

TABLES

FIGURES

CHAPTER TEN

IMPLEMENTATION

This chapter reviews the capital improvement projects included in the capital improvement plan (**CIP**) for Cedar City Regional Airport (**CDC**). An updated capital improvement plan was developed as part of this airport master plan to serve as a guide for timing the implementation of the recommendations included in this airport master plan. It also provides a planning-level cost estimate for each project to help understand the financial commitment associated with each project. Projects recommended in this airport master plan are depicted on the airport layout plan (**ALP**), making them eligible for Federal Aviation Administration (**FAA**) funding; provided they qualify under the FAA's Airport Improvement Program (**AIP**). Implementation of the proposed projects is at the sponsor's discretion and is contingent on the outcome of any required environmental reviews and funding commitments made at the time of implementation.

10.1. Capital Improvement Plan

Capital projects differ from operations and maintenance (**O&M**) projects in that capital projects often require substantial funding, must be planned several years in advance, and can take a few years to complete. Operations and maintenance projects consist of short-term projects related to routine maintenance as well as the operation and management of the airport. Capital projects are normally large infrastructure improvements and can include construction of runways, runway extensions, taxiways, and aprons. Acquisition of certain types of equipment, such as snow removal equipment or firefighting and rescue trucks as well as construction of associated storage buildings, may also be considered capital projects that are eligible for FAA and state funding assistance.

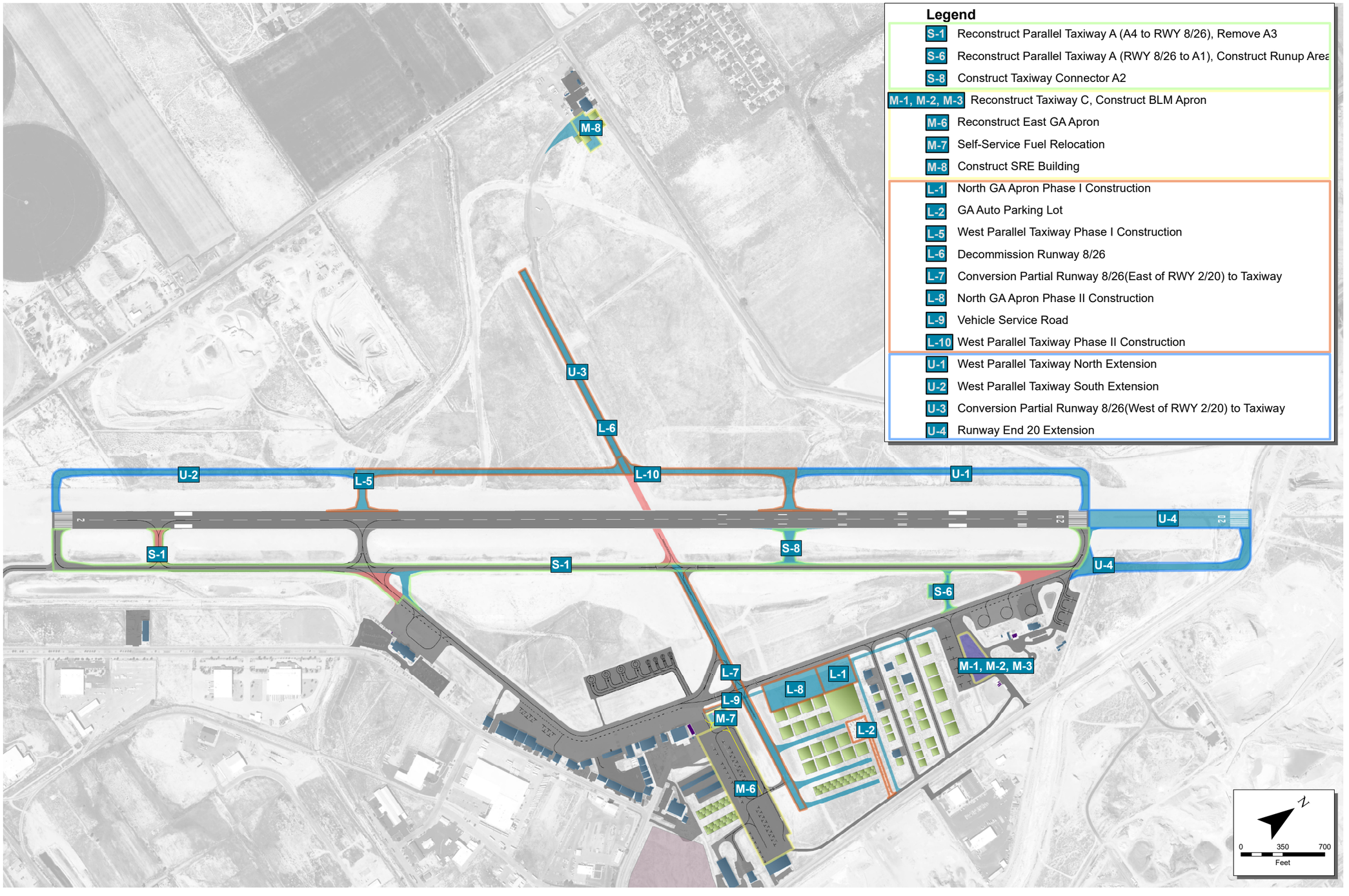
Airport master plans are usually completed every seven to 10 years at commercial service airports and every 10 to fifteen years at general aviation (GA) airports. Larger development items are determined to be needed and are justified through these planning efforts. Once a planning effort identifies a necessary project, it is added to the capital improvement plan by the airport sponsor during the annual capital improvement plan review by the state and FAA. Typically, during this review, completed projects are removed, pending projects are refined, and new projects are added. For large projects, depending on the priority of the project, it may take years to program (i.e., secure) the funding. Runways and safety areas are the top priority, and projects related to safety, such as wildlife fencing, are a high priority.

10.1.1. Project Phasing

The phasing of projects included in this capital improvement plan takes into consideration the timing and relationships of the projects. It is also based on priorities to maximize the efficiency of project implementation and funding availability. The plan includes projects listed in the airport's current capital improvement plan (as of 2024). New initiatives identified in this airport master plan were then included in the years beyond the projects already programmed for the next five years. While future demand and funding availability typically drive the implementation of projects, some projects can be undertaken at any point during the planning period. It is crucial for the airport sponsor to plan and program necessary projects well in advance to ensure both federal and local funding is available.

Projects included in the capital improvement plan are grouped based on when projects are expected to take place. Short-term development projects are expected to take place within one to five years, medium-term development projects are expected to take place within six to 10 years, and long-term development projects are expected to take place within 11–20 years. Some projects that are expected to take place beyond the 20-year planning horizon are also discussed because they are significant enough to justify reserving the land now so it remains available until needed. While these ultimate development projects are not included in the capital improvement plan at this time, it is essential they are taken into consideration when planning for the future in order to safeguard the airport's future growth and operational capabilities. These projects are shown in Figure 10.1 along with the corresponding project numbers and a summary of the phasing plan.

Figure 10.1: Proposed Improvements



Source: Ardurra.

10.1.2. Short-Term Development Projects

The following projects are expected to take place within one to five years.

S-1 and S-2: Reconstruct Parallel Taxiway A and Install LED Lighting
These projects involve a full reconstruction of the existing pavement on Taxiway A from Taxiway Connector A4 to Runway 8/26, upgrading to energy-efficient LED taxiway lighting, and removing Taxiway Connector A3.

S-3: Runway 8/26 Pavement Preservation
This project involves the use of pavement preservation treatments, such as crack sealing and surface treatments, to prevent significant damage, minimize costly repairs, and delay the need for expensive rehabilitation and reconstruction projects. (This project was approved in fiscal year 2022.)

S-4 and S-5: Seal Runway 2/20 and Taxiway Connectors A1–A4
These projects involve applying a protective sealant over the entire runway surface to waterproof it, shield it from oxidation, provide chemical resistance, and enhance durability to extend its useful life.

S-6, S-7, and S-8: Reconstruct Parallel Taxiway A and Install LED Lighting
These projects involve reconstruction of the existing pavement on Taxiway A from Runway 8/26 to Taxiway Connector A1, construction of a run-up area near the end of Runway 20, and construction of a new taxiway connector (A2) between Runway 8/26 and Taxiway Connector A1. (This new taxiway connector will be designated as A2 and the taxiway connector currently designated as A2 will then become A3.)

S-9 and S-10: Taxiway C Reconstruction and BLM Apron Expansion (Phase I: Design)
These projects involve designing the reconstruction of Taxiway C from the end of Runway 20 to Runway 8/26 along with the installation of LED taxiway edge lights and an expansion of the apron used by the U.S. Bureau of Land Management (**BLM**).

S-11: Seal Taxiway C
This project involves routine crack sealing and repair of Taxiway C to extend the useful life of the pavement.

S-12: Seal Terminal, General Aviation, and Fixed Base Operator Aprons
This project includes routine crack sealing and repair of the terminal, general aviation, and fixed base operator (**FBO**) aprons to extend the life of the pavement.

10.1.3. Medium-Term Development Projects

The following projects are expected to take place within six to 10 years.

M-1, M-2, and M-3: Taxiway C Reconstruction and BLM Apron Expansion (Phase II: Construction)
These projects are a continuation of the projects designed in projects S-9 and S-10. They include reconstruction of Taxiway C from the end of Runway 20 to Runway 8/26, installation of LED taxiway edge lights, and expansion of the apron used by the U.S. Bureau of Land Management.

M-4 and M-5: Runway 2/20 and Taxiway A Pavement Maintenance
These projects involve routine crack sealing and repair of Runway 2/20 and Taxiway A between Runway 8/26 and Taxiway Connector A1.

M-6: Reconstruct East General Aviation Apron
This project involves a complete reconstruction of the east general aviation apron.

M-7: Self-Service Fuel Relocation
The self-service fuel station will be relocated to a safer and more advantageous location on the east general aviation apron.

M-8: Construct a Four-Bay Snow Removal Equipment Building
The aging snow removal equipment building will be replaced with a facility capable of meeting the airport's needs.

10.1.4. Long-Term Development Projects

The following projects are expected to take place within 11–20 years.

L-1: North General Aviation Apron (Phase 1: Design and Construction)
This project involves the design and construction of the infrastructure needed for development of a large maintenance, repair, overhaul (MRO) and fixed base operator (FBO) facility as well as corporate aircraft hangars. This project is split into two phases; the second phase (L-8) is dependent on Runway 8/26 being decommissioned.

L-2: General Aviation Parking Lot
This project involves the design and construction of a parking lot and vehicle access to the aircraft hangars currently located in this area as well as the areas planned for development as part of projects L-1 and L-8. This project will run concurrently with Phase 1 of the north general aviation apron project L-1.

L-3: Airport Master Plan
It is recommended that airports complete a new airport master plan every seven to 10 years to help the airport plan and respond to changes in aviation activity, the economy, and the aviation industry as well as updated regulations, requirements, and improvements in technology.

L-4: Environmental Compliance for Runway 8/26 Decommissioning and Constructing a Parallel Taxiway
This project involves completing a categorical exclusion (CATEX) prior to decommissioning Runway 8/26 and constructing a parallel taxiway on the west side of Runway 2/20.

L-5: West Parallel Taxiway (Phase I: Design and Construction)
This project involves the design and construction of a partial parallel taxiway on the west side of Runway 8/26 to provide access to the area that will be developed for use as a cargo apron. It also includes the design and construction of a new taxiway connector located opposite the taxiway connector that is currently designated as A2. (Taxiway Connector A2 will become A3 upon completion of project S-8.)

L-6: Runway 8/26 Decommissioning and Airport Layout Plan Update
This project involves completing the steps necessary to decommission Runway 8/26. This includes all formal notifications, physical closure, application of required markings, strategic removal of pavement, and all other administrative aspects of a runway closure as well as an airport layout plan update.

L-7: Partial Conversion of Runway 8/26 to a Taxiway
This project involves reallocation of the pavement east of Runway 2/20 that is currently used for Runway 8/26 and converting it to a taxiway.

L-8: North General Aviation Apron (Phase II: Design)
This is the second phase of project L-1 and involves completing the design for the north general aviation apron and the infrastructure needed for development of a large maintenance, repair, overhaul (MRO) and FBO facility as well as corporate aircraft hangars.

L-9: Vehicle Service Road
This project involves the design and construction of a vehicle service road (VSR) parallel to Taxiway C to provide a safe access route between the FBO, Bureau of Land Management apron, and general aviation hangar areas on the north side of the airport. This will improve safety by providing fuel trucks with an efficient route for making deliveries, ensuring all airport vehicle traffic is kept off of taxiways, and reducing use of vehicle access gates.

L-10: West Parallel Taxiway (Phase II: Design and Construction)
This project is a continuation of project L-5 and involves extending the partial parallel taxiway to enhance access and improve circulation along the west side of Runway 2/20. It includes the design and construction of a partial parallel taxiway to the east of Runway 8/26 and a new taxiway connector located opposite the new Taxiway Connector A-2 that will be constructed as part of project S-8.

10.1.5. Ultimate Development Projects

Ultimate development projects are projects expected to take place beyond the 20-year planning period. Implementation of these projects will depend on how the needs of the airport change and evolve during the coming years.

U-1: West Parallel Taxiway (Phase III: Design and Construction)
This project is a continuation of projects L-5 and L-10 and involves extending the partial parallel taxiway to enhance access and improve circulation along the west side of Runway 2/20. It includes the design and construction of a partial parallel taxiway that extends to the end of Runway 20.

U-2: West Parallel Taxiway (Phase VI: Design and Construction)
This project is a continuation of projects L-5, L-10, and U-1 and involves extending the partial parallel taxiway to enhance access and improve circulation along the west side of Runway 2/20. It includes the design and construction of a partial parallel taxiway that extends to the end of Runway 2.

U-3: Conversion Partial Runway 8/26 (West of Runway 2/20) to Taxiway
This project involves reallocation of the pavement west of Runway 2/20 that is currently used for Runway 8/26 and converting it to a taxiway. This will provide access to the areas on the west side of the airport that will be developed for general aviation use.

U-4: Runway 20 Extension
This project involves extending the end of Runway 20 an additional 1,347 feet for a total runway length of 10,000 feet to accommodate air carrier and very large air tanker (VLAT) operations.

10.1.6. Rough Order of Magnitude Cost Estimates

Rough order of magnitude cost estimates for each of the short-term development projects included in the airport's current capital improvement plan are listed in Table 10.1, medium-term development projects are listed in Table 10.2, and long-term development projects are listed in Table 10.3. This includes both ongoing projects from the previous capital improvement plan as well as projects proposed as part of this airport master plan. Ultimate development projects are not included in the capital improvement plan at this time so cost estimates are not included for these projects.

The total cost for each project was estimated based on the current unit cost of materials and estimated gross quantities required for the project. It also includes the estimated cost of construction administration, engineering, and design as well as a 15% contingency. These estimates are in 2024 dollars and are only a general approximation provided for planning purposes. Several factors, including inflation and changes in the price of construction materials, can affect the accuracy of these estimates. The capital improvement plan should be reviewed annually, and these estimates should be updated prior to projects being implemented.

These tables also list the estimated amount the FAA is expected to contribute for each project. For projects eligible for Airport Improvement Program grant funding, the FAA is expected to contribute 95%, and the remaining 5% will be paid by the airport sponsor.

Table 10.1: Short-Term Development Project Costs

Project ID	Project Description	Federal	Local	Total
S-1	Reconstruct Parallel Taxiway A (A4–Runway 8/26)	$7,030,000	$370,000	$7,400,000
S-2	Install LED Lighting on Taxiway A (A4–Runway 8/26)	$1,045,000	$55,000	$1,100,000
S-3	Runway 8/26 Pavement Preservation	$0	$200,000	$200,000
S-4	Seal Runway 2/20	$665,000	$35,000	$700,000
S-5	Seal Taxiway Connectors A1–A4	$100,000	$6,000	$106,000
S-6	Taxiway A Reconstruction (Runway 8/26–A21)	$5,225,000	$275,000	$5,500,000
S-7	Taxiway A Reconstruction: Install LED Lighting	$456,000	$24,000	$480,000
S-8	Construct Taxiway Connector A2	$1,710,000	$90,000	$1,800,000
S-9	Taxiway C Reconstruction: RWY 20–RWY 8/26 (Ph I: Design)	$570,000	$30,000	$600,000
S-10	Taxiway C Reconstruction: Install LED lighting (Ph I: Design)	$100,000	$6,000	$106,000
S-11	Seal Taxiway C	$250,000	$20,000	$270,000
S-12	Seal Terminal, General Aviation, and FBO Aprons	$400,000	$50,000	$450,000
	Total	**$17,551,000**	**$1,161,000**	**$18,712,000**

Table 10.2: Medium-Term Development Project Costs

Project ID	Project Description	Federal	Local	Total
M-1	Taxiway C Reconstruction (Phase II: Construction)	$3,847,500	$202,500	$4,050,000
M-2	Taxiway C: Install LED Lighting (Phase II: Construction)	$855,000	$45,000	$900,000
M-3	BLM Apron Expansion (Phase II: Construction)	$902,500	$47,500	$950,000
M-4	Runway 2/20 Pavement Maintenance	$750,000	$50,000	$800,000
M-5	Taxiway A Pavement Maintenance	$350,000	$50,000	$400,000
M-6	Reconstruct East General Aviation Apron	$9,120,000	$480,000	$9,600,000
M-7	Self-Service Fuel Relocation	$997,500	$52,500	$1,050,000
M-8	Construct a Four-Bay Snow Removal Equipment Building	$4,009,000	$211,000	$4,220,000
	Total	**$20,831,500**	**$1,138,500**	**$21,970,000**

Table 10.3: Long-Term Development Project Costs

Project ID	Project Description	Federal	Local	Total
L-1	North GA Apron (Phase 1: Design and Construction)	$2,261,000	$119,000	$2,380,000
L-2	General Aviation Parking Lot	$0	$900,000	$900,000
L-3	Airport Master Plan	$950,000	$50,000	$1,000,000
L-4	Environmental Compliance (RWY 8/26 Decommissioning)	$47,500	$2,500	$50,000
L-5	West Parallel Taxiway (Phase I: Design and Construction)	$2,859,500	$150,500	$3,010,000
L-6	Runway 8/26 Decommissioning and ALP Update	$665,000	$35,000	$700,000
L-7	Partial Conversion of Runway 8/26 to a Taxiway	$579,500	$30,500	$610,000
L-8	North General Aviation Apron (Phase II: Design)	$2,052,000	$108,000	$2,160,000
L-9	Vehicle Service Road	$1,121,000	$59,000	$1,180,000
L-10	West Parallel Taxiway (Phase II: Design and Construction)	$7,875,500	$414,500	$8,290,000
	Total	**$18,411,000**	**$1,869,000**	**$20,280,000**

10.2. Airport Funding Sources

There are numerous sources of funding for airport projects that include a combination of local, state, and federal funds. The following programs are some of the more common sources used to fund capital improvement projects.

10.2.1. Airport Improvement Program

The Airport Improvement Program (AIP) provides grants for eligible planning and development projects at National Plan of Integrated Airport System (NPIAS) airports. This program is funded by the Airport and Airway Trust Fund (AATF) which is supported by taxes on ticket sales, air cargo and airmail, and aircraft fuel. To be eligible, projects must be related to enhancing airport safety, capacity, security, or environmental concerns. These typically include airfield construction and rehabilitation, airfield lighting and signage, navigational aids, and land acquisition as well as planning and environmental studies. Certain professional services that are necessary for eligible projects, such as planning, surveying, and design can also be eligible. Funds cannot be used for normal airport operating costs, including salaries, mowing equipment, and supplies. Airport Improvement Program grants mostly come in the form of nonprimary entitlements, and CDC currently receives $1,300,000 per year in entitlements.

10.2.2. Airport Infrastructure Grants

The Infrastructure Investment and Jobs Act of 2021 (IIJA), also referred to as the bipartisan infrastructure law (BIL), provided $25 billion in funding for the National Airspace System. Under the bipartisan infrastructure law, all airports in the National Plan of Integrated Airport Systems (NPIAS) received Airport Infrastructure Grant (AIG) entitlement funds for five years (fiscal year 2022 through fiscal year 2026). Allocation of these grant funds is based on enplanements from the previous calendar year for primary commercial service airports. The local match for these grants is the same as the sponsor's Airport Improvement Program grant match.

10.2.3. Passenger Facility Charges

Revenue from passenger facility charges is another source of funding for airport infrastructure projects. These are fees that were authorized by the Aviation Safety and Capacity Expansion Act of 1990 to help pay for infrastructure at commercial service airports. The passenger facility charge at CDC is currently set to $4.50 which is the maximum an airport can charge.

10.2.4. Fuel Tax

In Utah, aviation fuel is subject to state tax. At non-international airports like CDC, the tax rate is $0.09 per gallon. The airport where the fuel was purchased receives $0.03 per gallon and the Utah Department of Transportation (UDOT) Division of Aeronautics receives $0.06 per gallon for its operating budget. The tax rate is $0.04 per gallon for federally certificated air carriers with the airport receiving $0.03 per gallon and $0.01 per gallon is allocated to the Division of Aeronautics operating budget.

These tax revenues typically generate approximately $17,000 per year for CDC. According to Utah code, this can be used at the discretion of the airport's governing authority for construction and improvement projects, operations and maintenance, and debt service.

10.2.5. Bond Proceeds

Airports can issue bonds to pay for infrastructure projects by using future revenue to secure the necessary funding. This allows airport authorities to borrow money that is later repaid with interest. Like other municipal bonds, airport bonds are generally exempt from federal taxes. This tax-exempt status allows airports to issue bonds at lower interest rates than taxable bonds which reduces the cost to finance a project.

The use of bonds is critical for large projects, but it can impact the availability of revenue from sources like passenger facility charges and airport-generated income that are often used to service this debt.

While bond financing is commonly used by larger airports for substantial infrastructure projects, non-hub airports can also benefit from this funding mechanism. However, its applicability and feasibility can vary. Bonds can be a relevant and beneficial funding source for non-hub airports like CDC, providing an evaluation of revenue capacity and debt service obligations are carefully managed. The decision to issue bonds should be based on a comprehensive assessment of the airport's financial health and funding needs. The airport does not currently have any bond financing.

10.2.6. Utah State Grant and Loan Programs

The Utah Airport Aid Program (UAAP) provides discretionary grant funds to public airports in Utah. Eligible participants include any county, city, or public entity designated by Utah Code. These entities can apply for Utah Airport Aid Program funds to support airport improvements and development projects. Utah Airport Aid Program funds are derived from Utah's aviation fuel tax, which is $0.09 per gallon for aviation gasoline and jet fuel at non-international airports like CDC. The Utah Airport Aid Program is a trustee and benefit program that provides matching funds to municipal governments for improvements at public airports to ensure the proper development of a statewide airport system and fair distribution of aviation tax money. Allocations must address high-priority needs and maximize the use of available funds. The Utah Airport Aid Program is administered according to Utah Administrative Code. To participate, airport owners should have a state-approved airport plan and protective zoning in place. If these requirements are not met, the Utah Airport Aid Program can provide funding to help develop or update the necessary plans and zoning.

The Utah Department of Transportation Division of Aeronautics also offers two other programs to assist airports. The Airport Maintenance and Safety Supplies Program provides funding for maintenance items such as lamps, light fixtures, and wind cones, and the Small Projects Program provides funding for emergency or unscheduled improvements costing less than $2,000.

The Utah Governor's Office of Economic Opportunity administers several programs to support rural community development. This includes the Community Development Block Grant Program (CDBG) which is a grant available to Utah cities and counties with populations of less than 50,000. This program funds public facility improvements that support business expansion and job creation.

10.2.7. Local Funding

Local funds are typically derived from income generated by the operation of the airport through leases and user fees or contributions made by the sponsoring agency. They are mainly used as matching funds for federal grants or to fund operating and maintenance costs and administration of the airport. The types of projects that are typically funded using local funds include automobile parking areas, private aprons and hangars, fuel-storage facilities, and utilities.

10.2.8. Private Funding

Private funding for airport improvements typically comes from companies or individuals (e.g., FBO, cargo companies) that have a vested interest in investing in airport facilities. Such endeavors may require substantial infrastructure improvements that ultimately benefit the public use portions of the airport but obligate the investor with a large financial commitment. Financial commitments of this magnitude require long-term agreements between the private entity and airport sponsor to make it attractive to investors.

10.2.9. Financial Feasibility Summary

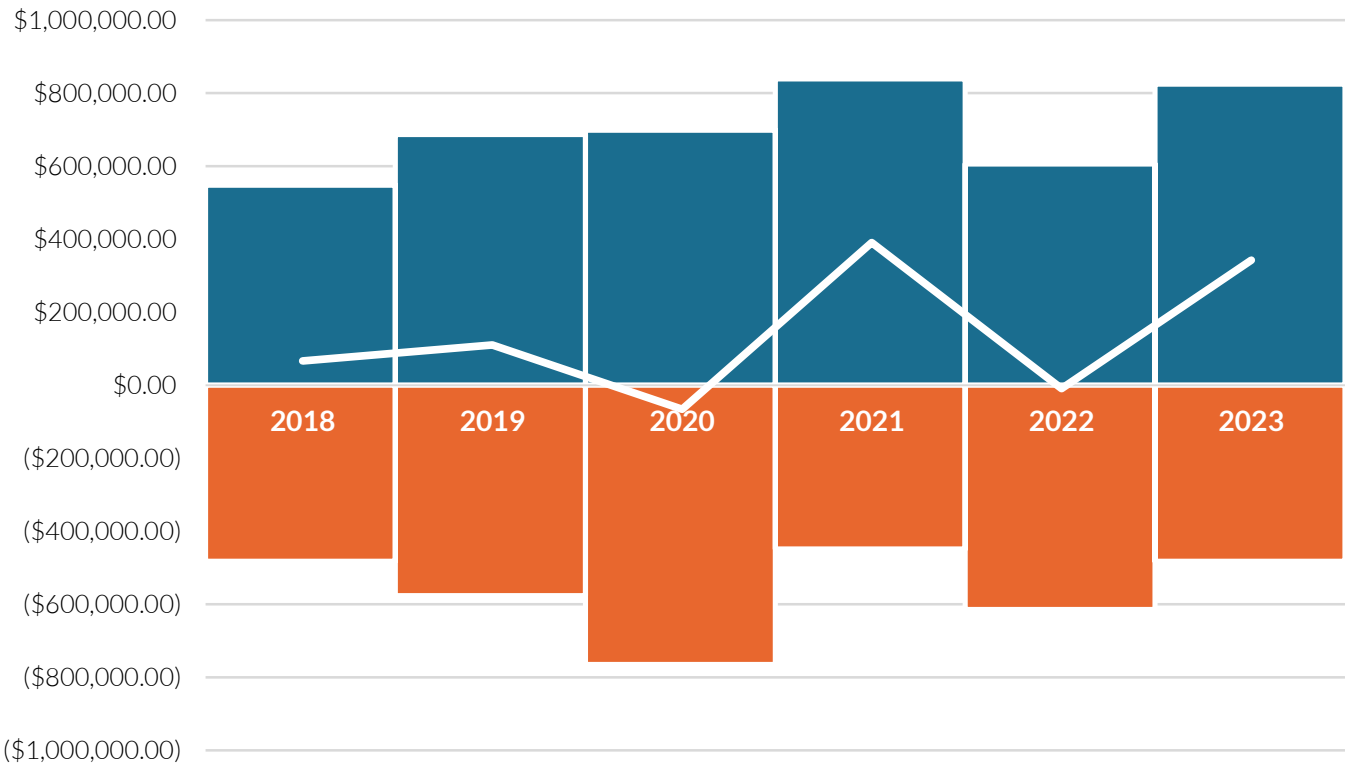
The airport experienced noticeable fluctuations in both revenue and expenses for 2018 to 2023 (Figure 10.2). The airport experienced a notable increase in income for 2021 when it hit a peak of $839,015. This was largely due to higher revenues and controlled expenses for that year. However, the overall trend reflects a mixed financial performance with fluctuations in net income.

The dip in net income for 2020 is likely attributed to the impact of the COVID-19 pandemic which severely disrupted global air travel and airport operations. The pandemic led to reduced passenger volumes, decreased airline operations, and lower overall demand for airport services; all of which contributed to the financial downturn observed for 2020.

These figures indicate that while the airport has had profitable years, it has also faced financial challenges; particularly in maintaining a consistent surplus. This suggests that while the airport has the potential to be financially sustainable, careful management of revenue generation and cost controls will be critical in ensuring its sustained financial health. The evident variability in net income underscores the importance of strategic planning and possibly even exploring additional revenue streams or cost-saving measures to reduce risks in future operations.

This variability in financial performance presents an ongoing challenge in funding capital projects at the airport. However, this is common among small non-hub commercial and general aviation airports. As such, pursuing revenue generation opportunities will be vital for ensuring sustainable revenue streams. This airport master plan identified multiple opportunities to cut costs and increase revenue from land leases. Specifically, decommissioning Runway 8/26 will, in the long term, reduce overall maintenance costs and open prime areas of land for hangar development. Additionally, demand for non-aeronautical developments on property owned by the airport may materialize as Cedar City continues to expand. Overall, CDC is well-positioned to support future airport enhancements.

Figure 10.2: Airport Net Revenue



	2018	2019	2020	2021	2022	2023
Revenues	$547,917	$686,674	$698,742	$839,015	$605,557	$824,538
Expenses	($481,680)	($576,057)	($764,558)	($448,281)	($614,299)	($481,680)
Net Income	**$66,237**	**$110,617**	**($65,816)**	**$390,734**	**($8,742)**	**$342,858**

Source: Airport Records

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